

Network Working Group  
Request for Comments: 4846  
Category: Informational

J. Klensin, Ed.  
D. Thaler, Ed.  
July 2007

## Independent Submissions to the RFC Editor

### Status of This Memo

This memo provides information for the Internet community. It does not specify an Internet standard of any kind. Distribution of this memo is unlimited.

### Copyright Notice

Copyright (C) The IETF Trust (2007).

### Abstract

There is a long-standing tradition in the Internet community, predating the Internet Engineering Task Force (IETF) by many years, of use of the RFC Series to publish materials that are not rooted in the IETF standards process and its review and approval mechanisms. These documents, known as "Independent Submissions", serve a number of important functions for the Internet community, both inside and outside of the community of active IETF participants. This document discusses the Independent Submission model and some reasons why it is important. It then describes editorial and processing norms that can be used for Independent Submissions as the community goes forward into new relationships between the IETF community and its primary technical publisher.

## Table of Contents

1. Introduction . . . . .	3
1.1. Terminology Note . . . . .	3
1.2. Context and Philosophical Assumptions . . . . .	4
2. The Role of Independent Submissions . . . . .	4
3. Document Submission . . . . .	5
4. The Review Process . . . . .	6
4.1. Posting of Draft . . . . .	6
4.2. Request for Publication . . . . .	6
4.3. Initial RFC Editor Review . . . . .	6
4.4. Review and Evaluation . . . . .	7
4.5. Additional Reviews . . . . .	7
4.6. Document Rejection . . . . .	7
4.7. Final Decision and Notification . . . . .	8
4.8. Final Editing and Publication . . . . .	8
5. Formal IESG Review . . . . .	8
6. The Editorial Review Board . . . . .	9
7. Status and Availability of Reviews . . . . .	10
7.1. Posted Reviews . . . . .	10
7.2. Rejected Documents . . . . .	11
7.3. Documents Approved for Publication . . . . .	11
8. Intellectual Property Rights . . . . .	11
9. Security Considerations . . . . .	13
10. Acknowledgments . . . . .	13
11. References . . . . .	13
11.1. Normative References . . . . .	13
11.2. Informative References . . . . .	14
Appendix A. IAB Members at the Time of Approval . . . . .	15

## 1. Introduction

There is a long-standing tradition in the Internet community, predating the IETF by many years, of use of the RFC Series to publish materials that are not rooted in the IETF standards process and its review and approval mechanisms. These documents, known as "Independent Submissions", serve a number of important functions for the Internet community, both inside and outside of the community of active IETF participants. This document discusses the Independent Submission model and some reasons why it is important. It then describes editorial and processing norms that can be used for Independent Submissions as the community goes forward into new relationships between the IETF community and its primary technical publisher.

To understand the perspective of this document, it is important to remember that the RFC Editor function predates the creation of the IETF. As of the time of this writing, the RFC Series goes back 38 years [RFC2555], while the IETF is celebrating its 21st anniversary. All of the documents that were published before the IETF was created, and for some years thereafter, would be considered Independent Submissions today. As the IETF evolved, the Internet Architecture Board (IAB) and then the IETF itself chose to publish IETF documents as RFCs while fully understanding that the RFC Editor function was an independent publication mechanism. Other decisions were possible: e.g., the IETF could have decided to create its own publication series. It was felt that there was considerable value in continuing to publish the IETF work in the same series as the one used to publish the basic protocols for the Internet.

### 1.1. Terminology Note

This document describes what have historically been referred to as "Independent Submissions". That term is distinguished from those IETF and IAB community documents that originate from formal groups -- the IAB, IRTF, and IETF Working Groups -- and from submissions submitted to the Internet Engineering Steering Group (IESG) for Standards-Track, Informational, or Experimental processing. Documents produced by individuals, rather than IETF WGs or others IETF-affiliated groups, but submitted for publication via the IESG under Area Director sponsorship, are known as "individual submissions".

For convenience and obvious historical reasons, the editor and publisher of documents that are not processed through the IETF is known below as the "RFC Editor". The RFC Editor will typically be an organization of one or more senior people and associated editorial staff, and the term is used collectively below. That term is not

intended to predict the future, either in terms of who does the job or what they, or the document series, are called.

## 1.2. Context and Philosophical Assumptions

This document complements the discussion and guidelines in [RFC4714], which focuses on Standards-Track documents. It takes a somewhat stronger view than the discussions that led to that document, starting from the belief that Independent Submissions are most valuable if they are, in fact, independent of the IETF process. From the perspective of the IETF, Independent Submissions are especially important as checks on the IETF processes even though such checks are not the only, or even a common, reason for them. That role is compromised if IETF-related entities are able to block or deprecate such documents to a degree beyond that needed to avoid difficulties with the standards process.

## 2. The Role of Independent Submissions

When the RFC Series was fairly new, RFCs were used to publish general papers on networking as well as the types of documents we would describe as standards today. Those roles also developed as part of the early design and development of the ARPANET, long before anyone dreamt of the IETF and when the distinction between, e.g., Standards and Informational documents was less precisely drawn. In more recent years, Independent Submissions have become important for multiple reasons, some of them relatively new. They include:

- o Discussion of Internet-related technologies that are not part of the IETF agenda.
- o Introduction of important new ideas as a bridge publication venue between academia and IETF engineering.
- o Informational discussions of technologies, options, or experience with protocols.
- o Informational publication of vendor-specific protocols.
- o Critiques and discussions of alternatives to IETF Standards-Track protocols. The potential for such critiques provides an important check on the IETF's standards processes and should be seen in that light.
- o Documents considered by IETF Working Groups but not standardized. While many documents of this type are still published in the IETF document stream (see [RFC4844], Section 5.1.1) as Informational or

Experimental RFCs, the Independent Submission path has traditionally been open to them as well. However, because of their intimate connection to the IETF Standards Process and WG activities and the consequent sensitivity to exact statements of relationships and to timing, there is reason to believe that such documents should normally be published via the IETF document stream. In any event, these documents are published for the historical record.

- o Satirical materials.
- o Meeting notes and reports (RFC 21 [RFC0021] is the earliest; RFC 1109 [RFC1109] is probably the most important).
- o Editorials (the best example is IEN 137 [IEN137], not an RFC).
- o Eulogies (RFC 2441 [RFC2441]).
- o Technical contributions (e.g., RFC 1810 [RFC1810]).
- o Historically, RFC Editor and, at least prior to the handoff between the Informational Sciences Institute (ISI) and the Internet Corporation for Assigned Names and Numbers (ICANN) and the June 2000 MOU [RFC2860], Internet Assigned Numbers Authority (IANA) Policy Statements (e.g., RFC 2223 [RFC2223] and RFC 1591 [RFC1591]).

It should be clear from the list above that, to be effective, the review and approval process for Independent Submissions should be largely independent of the IETF. As an important principle that has been applied historically, the RFC Editor seeks advice from the IESG about possible relationships and conflicts with IETF work. Any submission that constitutes an alternative to, or is in conflict with, an IETF Standard or proposal for Standards-Track adoption must clearly indicate that relationship. The IESG may identify such conflicts as part of its review.

The specific procedures to be followed in review are described in Section 4 and Section 5.

### 3. Document Submission

Independent Submissions are submitted directly to the RFC Editor. They must first be posted as Internet-Drafts (I-Ds), so the submission is typically simply a note requesting that the RFC Editor consider a particular Internet-Draft for publication. The process is described in [RFC2223]. Further information can be found in the working draft of an update of that document [RFC2223BIS].

Any document that meets the requirements of this specification, of [RFC2223] and its successors, and of any intellectual property or other conditions that may be established from time to time, may be submitted to the RFC Editor for consideration as an Independent Submission. However, the RFC Editor prefers that documents created through IETF processes (e.g., working group output) be considered by the IESG and submitted using this path only if a working group or the IESG declines to publish it. In the latter cases, the review process will be more efficient if the authors provide a history of consideration and reviews of the document at the time of submission.

#### 4. The Review Process

In general, the steps in the review process are identified in the subsections below. Any of them may be iterated and, at the discretion of the RFC Editor, steps after the first may be taken out of order. In addition, the IESG review, as discussed in Section 5, must take place before a final decision is made on whether to publish the document.

##### 4.1. Posting of Draft

The author(s) or editor(s) of a document post it as an Internet-Draft.

##### 4.2. Request for Publication

After the normal opportunity for community review and feedback provided by the submission of the I-D and the I-D repository announcement thereof, the author or editor sends a request for consideration for publication to the RFC Editor at [rfc-editor@rfc-editor.org](mailto:rfc-editor@rfc-editor.org). That request should note any community discussion or reviews of the document that have occurred before submission, as well as the desired document category (Informational or Experimental, as discussed in RFC 2026 [RFC2026], Section 4.2).

If the document requires any IANA allocations, authors should take care to check the assignment policy for the relevant namespace, since some assignment policies (e.g., "IETF Consensus") cannot be used by Independent Submissions. See RFC 2434 [RFC2434] for more information.

##### 4.3. Initial RFC Editor Review

RFC Editor staff performs an initial check on the document to determine whether there are obvious issues or problems and to decide on the sequencing of other steps.

At any time during the process, the RFC Editor may make general and/or specific suggestions to the author on how to improve the editorial quality of the document and note any specific violations of the rules. The author will be expected to make the suggested updates, submit a new version, and inform the RFC Editor. This may be repeated as often as necessary to obtain an acceptable editorial quality.

#### 4.4. Review and Evaluation

The RFC Editor arranges for one or more reviews of the document. This may include Editorial Board (see Section 6) reviews or reviews by others. Unsolicited reviews from parties independent of the author are welcome at any time.

At minimum, the author of every document shall receive a written summary of the review(s). Reviewer anonymity is discussed in Section 7. The RFC Editor may also share reviews with the Editorial Board.

An author rebuttal to some aspect of a review, followed by a healthy technical dialog among the author and the reviewer(s), is fully appropriate. Consensus followed by document revision is the desired outcome.

The RFC Editor is expected to consider all competent reviews carefully, and in the absence of some unusual circumstance, a preponderance of favorable reviews should lead to publication.

#### 4.5. Additional Reviews

If the author is dissatisfied with one or more review(s), the author may request that the RFC Editor solicit additional reviews. In exceptional circumstances, the author may request that the IAB review the document. Such requests to the IAB, and any reviews the IAB chooses to perform, will occur according to procedures of the IAB's choosing. The IAB is not required to initiate a review or comply with a request for one: a request to the IAB for a review is not an appeal process.

#### 4.6. Document Rejection

If any stage of the review process just described leads to the conclusion that the document is not publishable, the RFC Editor may reject the document. Such rejection would normally be based on the conclusion that the submission does not meet the technical or editorial standards of the RFC Series or is not relevant to the areas that the series covers.

If a document is rejected by the RFC Editor, the author may request an additional review from the IAB, as described below, but the IAB is not obligated to perform that review, nor is the RFC Editor obligated to publish it, even with a favorable IAB review.

#### 4.7. Final Decision and Notification

In all cases, the ultimate decision to publish or not publish, and with what text, rests with the RFC Editor.

The RFC Editor will communicate the final decision to the author and the Editorial Board. For a rejection, there will be a summary of the reason(s) for the action.

Information about any IESG-requested publication delay or request to not publish a document will be posted to the RFC Editor Web site to supplement document status information.

#### 4.8. Final Editing and Publication

Once a document is approved for publication, it is handled in a fashion similar to other RFCs, with principles about priorities worked out with the IAB as appropriate.

### 5. Formal IESG Review

At an appropriate time in the review process, normally after the RFC Editor has made a tentative decision to publish, the document is forwarded to the IESG for evaluation with a relatively short timeout. If the nature of the document persuades the RFC Editor or the IESG that the interests of the community or efficiency in the publication process would be better served by a different schedule, then that schedule should be followed. For example, if it appears to the RFC Editor that it is likely that the IESG will wish to take the document over and assign it to a working group, it may be better to ask for the IESG review prior to incurring the delays associated with other reviews or significant editorial work.

The IESG evaluation is not a technical one. Instead, it covers the issues listed in RFC 3932 [RFC3932] or its successors, presumably from the perspective outlined above in Section 1.2. That is, the evaluation should focus exclusively on conflicts or confusion with IETF process and attempts to subvert ("end run") working group activities.

At the time the document is forwarded to the IESG, the RFC Editor posts an indication on its Web site that the document is under IESG review and that comments on conflicts can be sent to the IESG with



copies to the RFC Editor. Additional mechanisms may be developed from time to time to inform a community that a document is entering formal prepublication review. Comments not directly related to IETF procedures or conflicts may be sent directly to the author(s) and RFC Editor.

In addition to the IESG review for conflict with IETF work, individuals in the IESG or in the broader IETF community are free to review a draft and, if they have comments of any kind --including the extreme case of believing that the proposal is damaging to the Internet as a whole-- these comments should be directed to the author(s) and the RFC Editor.

If the IESG, after completing its review, identifies issues, it may recommend explanatory or qualifying text for the RFC Editor to include in the document if it is published.

If the IESG concludes that publication of the document should be delayed for a reasonable period of time because its untimely publication could cause confusion or other harm with proposals under consideration for standardization, the RFC Editor will grant that request. The current agreement between the RFC Editor and the IESG on requested delays is expected to continue. That agreement permits the IESG to ask for a delay of up to six months and, if necessary, to renew that request twice, for a total possible delay of 18 months.

If the IESG concludes that the document should not be published as an RFC, it will request that the RFC Editor not publish and provide appropriate justification for that request. The RFC Editor will consider the request to not publish the document.

The RFC Editor or the author may request that the IAB review the IESG's request to delay or not publish the document and request that the IAB provide an additional opinion. Such a request will be made public via the RFC Editor Web site. As with the IESG review itself, the IAB's opinion, if any, will be advisory. And, as with author requests for an IAB technical review (see Section 4.5), the IAB is not obligated to perform this type of review and may decline the request.

## 6. The Editorial Review Board

The RFC Editor appoints and maintains the Editorial Review Board, which, much like the editorial boards of professional journals and publishers, provides the RFC Editor with both advice and reviews of particular proposed publications and general and strategic policy advice. The membership list of the Editorial Review Board is public and can be found at <http://www.rfc-editor.org/edboard.html>.

Editorial Board members serve at the pleasure of the RFC Editor. From time to time, the RFC Editor will solicit suggestions for new appointees from the IAB and other sources and will seek IAB comments on those to be appointed. The RFC Editor will also solicit IAB comments on the effectiveness of the review process and the quality of documents being published and criteria applied. However, to ensure the independence of the Independent Submission process, the final decision to appoint (or not appoint) Editorial Board members rests with the RFC Editor.

## 7. Status and Availability of Reviews

The RFC Editor will conduct the reviews discussed above with the intent of balancing fairness to authors, transparency of the review process to the general community, protection of reviewers from possible retaliation or undue pressure, and the interest of the community in having any significant dissents from published documents available to the community with the same degree of scrutiny that the original documents received. To this end, reviews and information about reviewers will be made public under the following circumstances. In special cases in which other considerations apply, the RFC Editor may adopt special provisions after reviewing the circumstances and proposed action with the IAB.

Any reviewer participating in the process outlined in this document does so on the condition of giving consent to handling of the reviews as outlined in this section. In special cases, individual arrangements may be worked out in advance with the RFC Editor.

As described in Section 4.4, all reviews will be shared with the document authors (with possible editing to remove any extreme language). The names of the reviewers will normally accompany these reviews, but reviewers will be granted anonymity upon request to the RFC Editor. The RFC Editor will in any case forward any author rebuttal messages to the reviewer.

Nothing in this section or the subsections below precludes private communications between reviewers, the Editorial Board, and the RFC Editor; such communications will remain confidential.

### 7.1. Posted Reviews

Once a final accept or reject decision has been made on a document, the RFC Editor may choose to post the full set of reviews (and author rebuttals, if any) associated with a document, if doing so would be in the best interest of the community. The author may request earlier posting of reviews and rebuttals, to inspire additional unsolicited reviews, for example. The names of the reviewers will

accompany their reviews, except for a reviewer who requested anonymity.

The author will be notified in advance of the intent to post the final reviews. The author may then request that the document be withdrawn and the reviews kept private. However, such an author request must be timely, generally within 14 days of the notification of intent to post.

## 7.2. Rejected Documents

If the RFC Editor rejects a document, the author has the following options for recourse.

- o Request one or more additional reviews (Section 4.5) followed by a reconsideration.
- o Request an IAB review (Section 4.5, Section 4.6) followed by a reconsideration.
- o Request that the reviews be published on the RFC Editor Web site.

## 7.3. Documents Approved for Publication

In considering whether to make review materials public for documents accepted for publication, the RFC Editor is expected to note that the best way to comment on or dissent from an RFC is generally another RFC; that reviews critical of a document are not themselves reviewed; that the review and refutation process is necessarily fragmentary; and that a reviewer who feels strongly about a subject about which a review has already been written often would not need to do significant additional work to produce an RFC-format document from that review.

## 8. Intellectual Property Rights

The following material was extracted from the relevant sections of BCP 78 [RFC3978] [RFC4748] in order to get all Independent Submission information for technical publications produced under the auspices of the IETF, the IETF Administrative Support Activity (IASA) or the IETF Trust, or the Internet Society (ISOC) into a single place and to initialize the process of separating discussions of Independent Submissions from those about Standards-Track or other IETF documents. Note that the text that follows uses the term "RFC Editor Contribution" to describe the same type of document referred to as an "Independent Submission" elsewhere in this document. The RFC Editor

may change these provisions from time to time after obtaining the advice and consent of the IETF Trust in the RFC Editor's capacity as the formal publisher of RFCs.

By submission of an RFC Editor Contribution, each person actually submitting the RFC Editor Contribution, and each named co-Contributor, is deemed to agree to the following terms and conditions, and to grant the following rights, on his or her own behalf and on behalf of the organization the Contributor represents or is sponsored by (if any) when submitting the RFC Editor Contribution.

- a. For Internet-Drafts that are expected to be submitted as RFC Editor Contributions: To the extent that an RFC Editor Contribution or any portion thereof is protected by copyright and other rights of authorship, the Contributor, and each named co-Contributor, and the organization he or she represents or is sponsored by (if any) grant an irrevocable, non-exclusive, royalty-free, world-wide right and license to the IETF Trust and the IETF under all intellectual property rights in the RFC Editor Contribution for at least the life of the Internet-Draft, to copy, publish, display, and distribute the RFC Editor Contribution as an Internet-Draft.
- b. For an RFC Editor Contribution submitted for publication as an RFC, and to the extent described above, the Contributor, each named co-Contributor, and the organizations represented above grant the same license to those organizations and to the community as a whole to copy, publish, display, and distribute the RFC Editor Contribution irrevocably and in perpetuity and, also irrevocably and in perpetuity, grant the rights listed below to those organizations and entities and to the community:
  - A. to prepare or allow the preparation of translations of the RFC into languages other than English,
  - B. unless explicitly disallowed in the notices contained in an RFC Editor Contribution, to prepare derivative works (other than translations) that are based on or incorporate all or part of the RFC Editor Contribution, or comment upon it. The license to such derivative works shall not grant the IETF Trust, the IETF, or other party preparing a derivative work any more rights than the license to the original RFC Editor Contribution, and
  - C. to reproduce any trademarks, service marks, or trade names that are included in the RFC Editor Contribution solely in connection with the reproduction, distribution, or

publication of the RFC Editor Contribution and derivative works thereof as permitted by this paragraph. Any entity reproducing RFC Editor Contributions will, as a condition of permission of such reproduction, preserve trademark and service mark identifiers used by the Contributor of the RFC Editor Contribution, including (TM) and (R) where appropriate.

- D. The Contributor grants the IETF Trust and the IETF, permission to reference the name(s) and address(es) of the Contributor(s) and of the organization(s) s/he represents or is sponsored by (if any).

## 9. Security Considerations

This document specifies an RFC Editor (and, indirectly, IETF) administrative and publication procedure. It has no specific security implications.

## 10. Acknowledgments

Special thanks are due to Bob Hinden and Craig Partridge, who made several suggestions for improved text in earlier versions of this document, and to Stewart Bryant, Scott Bradner, Brian Carpenter, Vint Cerf, Leslie Daigle, and Olaf Kolkman, who made a number of useful suggestions about the organization and content of subsequent versions. We also express our appreciation to the IETF and Scott Bradner, Editor, for the material extracted from BCP 78 [RFC3978] and used in Section 8.

## 11. References

### 11.1. Normative References

- [RFC2026] Bradner, S., "The Internet Standards Process -- Revision 3", BCP 9, RFC 2026, October 1996.
- [RFC2223] Postel, J. and J. Reynolds, "Instructions to RFC Authors", RFC 2223, October 1997.
- [RFC3932] Alvestrand, H., "The IESG and RFC Editor Documents: Procedures", BCP 92, RFC 3932, October 2004.
- [RFC3978] Bradner, S., "IETF Rights in Contributions", BCP 78, RFC 3978, March 2005.
- [RFC4748] Bradner, S., "RFC 3978 Update to Recognize the IETF Trust", BCP 78, RFC 4748, October 2006.

## 11.2. Informative References

- [IEN137] Cohen, D., "On Holy Wars and a Plea for Peace", IEN 137, April 1980, <ftp://ftp.rfc-editor.org/in-notes/ien/ien137.txt>.
- [RFC0021] Cerf, V., "Network meeting", RFC 21, October 1969.
- [RFC1109] Cerf, V., "Report of the second Ad Hoc Network Management Review Group", RFC 1109, August 1989.
- [RFC1591] Postel, J., "Domain Name System Structure and Delegation", RFC 1591, March 1994.
- [RFC1810] Touch, J., "Report on MD5 Performance", RFC 1810, June 1995.
- [RFC2223BIS] Reynolds, J., Ed. and R. Braden, Ed., "Instructions to Request for Comments (RFC) Authors", Work in Progress, August 2004.
- [RFC2434] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 2434, October 1998.
- [RFC2441] Cohen, D., "Working with Jon Tribute delivered at UCLA, October 30, 1998", RFC 2441, November 1998.
- [RFC2555] Braden, R., Reynolds, J., Crocker, S., Cerf, V., Feinler, J., and C. Anderson, "30 Years of RFCs", RFC 2555, April 1999.
- [RFC2860] Carpenter, B., Baker, F., and M. Roberts, "Memorandum of Understanding Concerning the Technical Work of the Internet Assigned Numbers Authority", RFC 2860, June 2000.
- [RFC4714] Mankin, A. and S. Hayes, "Requirements for IETF Technical Publication Service", RFC 4714, October 2006.
- [RFC4844] Daigle, L., Ed. and IAB, "The RFC Series and RFC Editor", RFC 4844, July 2007.

## Appendix A. IAB Members at the Time of Approval

Bernard Aboba  
Loa Andersson  
Brian Carpenter  
Leslie Daigle  
Elwyn Davies  
Kevin Fall  
Olaf Kolkman  
Kurtis Lindqvist  
David Meyer  
David Oran  
Eric Rescorla  
Dave Thaler  
Lixia Zhang

## Authors' Addresses

John C Klensin (editor)  
1770 Massachusetts Ave, #322  
Cambridge, MA 02140  
USA

Phone: +1 617 491 5735  
EMail: john-ietf@jck.com

Dave Thaler (editor)  
One Microsoft Way  
Redmond, WA 98052  
USA

Phone: +1 425 703 8835  
EMail: dthaler@microsoft.com

## Full Copyright Statement

Copyright (C) The IETF Trust (2007).

This document is subject to the rights, licenses and restrictions contained in BCP 78, and except as set forth therein, the authors retain all their rights.

This document and the information contained herein are provided on an "AS IS" basis and THE CONTRIBUTOR, THE ORGANIZATION HE/SHE REPRESENTS OR IS SPONSORED BY (IF ANY), THE INTERNET SOCIETY, THE IETF TRUST AND THE INTERNET ENGINEERING TASK FORCE DISCLAIM ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

## Intellectual Property

The IETF takes no position regarding the validity or scope of any Intellectual Property Rights or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; nor does it represent that it has made any independent effort to identify any such rights. Information on the procedures with respect to rights in RFC documents can be found in BCP 78 and BCP 79.

Copies of IPR disclosures made to the IETF Secretariat and any assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification can be obtained from the IETF on-line IPR repository at <http://www.ietf.org/ipr>.

The IETF invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard. Please address the information to the IETF at [ietf-ipr@ietf.org](mailto:ietf-ipr@ietf.org).

## Acknowledgement

Funding for the RFC Editor function is currently provided by the Internet Society.



